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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/015,316      | 12/12/2001  | John Hufferd         | IL920000089US2      | 2909             |

7590 03/29/2006

IBM CORPORATION  
INTELLECTUAL PROPERTY LAW DEPT.  
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EXAMINER

AHMED, SALMAN

ART UNIT PAPER NUMBER

2616

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

8/14

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/015,316 | <b>Applicant(s)</b><br>HUFFERD ET AL. |  |
|                              | <b>Examiner</b><br>Salman Ahmed      | <b>Art Unit</b><br>2666               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2/28/2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

Claims 1-8 are rejected.

Claims 1-8 are pending.

***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The claimed invention is directed to non-statutory subject matter.

Claims 1-8 are directed to a data structure involving mere arrangement of data. The claims are not directed towards any of the statutory subject matter; i.e. process, machine, manufacture, or composition of matter. An abstract idea, stored in a computer-readable medium, in a computer, on an electromagnetic carrier signal does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 3-5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brustoloni et al. (US PAT 6886103), hereinafter referred to as Brustoloni and in view of Sapuntzakis et al. (hereinafter referred to as Sapuntzakis) IETF draft TCP RDMA option draft-csapuntz-tcprdma-00.txt, Cisco Systems February 2000, and further in view of Tsunoda (US PAT 6516435).

In regards to claims 3-5, 7 and 8, Brustoloni teaches a data packet header (figure 2) comprising: an internet protocol (IP) header (figure 2, IP header), and a transmission control protocol (TCP) header (figure 2, TCP header), and IPSec defined protocols like the AH (Authentication Header) protocol (figure 2 element 202) and the ESP (Encapsulating Security Payload) protocol (figure 3 element 302) header inserted between TCP and IP header and transported using TCP/IP.

Brustoloni does not explicitly teach a remote direct memory access (RDMA) header (Figure in page 5 section 3.1 Usage), can also be transported using TCP/IP.

Sapuntzakis in the same field of endeavor teaches (page 4 lines 2-5) the sender places the option on TCP segments containing RDMA data. The RDMA option describes to the receiver the location of the RDMA data in the TCP payload.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Brustoloni's teaching of putting IPsec related data header with IP and TCP with Sapuntzakis's teaching of transporting RDMA related header via TCP/IP. The motivation is that (as suggested by Sapuntzakis, abstract) the TCP option introduced in the draft reduces the overhead of receiving data with TCP-based protocols such as NFS and HTTP. It enables the construction of a simple hardware accelerator that copies data directly from the incoming packet into application buffers, avoiding expensive copies in the protocol stack. Even without hardware acceleration, the option enables the protocol stack to decrease the number of copies it must do.

In regards to claims 3-5, 7 and 8 Brustoloni in view of Sapuntzakis teach sending RDMA header with IP and TCP headers as described above.

In regards to claims 3-5, 7 and 8 Brustoloni in view of Sapuntzakis does not explicitly teach at least two of the data packets contain the TCP, IP and RDMA headers and at least two of said data packets is each data packet in the stream.

Tsunoda in the same field of endeavor teaches sending redundant (column 21 lines 40-41, m pieces of information packets and the k pieces of redundant packets are transmitted) packets.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Brustoloni in view of Sapuntzakis's teaching by incorporating the step of sending redundant packets as taught by Tsunoda. The motivation is that (as taught by Tsunoda, column 3 lines 27-30) Tsundoa's teaching provides an error correction scheme, which can produce redundant packets.

### ***Response to Arguments***

4. Applicant's arguments, see pages 2-3 of the Remarks section, filed 2/28/2006, with respect to the rejections of claims 1-8 have been fully considered. Applicant's argument in regards to claims 1, 2 and 6 are persuasive and as such USC 35 103 rejection has been withdrawn. Applicant's argument in regards to claims 3-5, 7 and 8 are not persuasive. Claims 3-5, 7 and 8 does not distinctly cite limitation stating RDMA header is between tcp and ip header.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571)272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit 2616

SA  
03/23/06



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